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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/370,981 08/10/99 OGAWA

Y 104018

EXAMINER

IM22/0604

OLIFF & BERRIDGE PLC
P O BOX 19928
ALEXANDRIA VA 22320

FISCHER, J

ART UNIT

PAPER NUMBER

1733

DATE MAILED:

06/04/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/370,981

Applicant(s)

OGAWA, YUICHIRO

Examiner

Justin R Fischer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 August 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 5-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

DETAILED ACTION

Applicant's election with traverse of a tire design incorporating a carcass ply that has a roundtrip return portion located through a side face of the bead core in Paper No. 6 is acknowledged. The traversal is on the ground(s) that the examination of the entire application could be made without serious burden. This is not found persuasive because it is the examiner's position that the species are not obvious variants and no evidence to support this has been provided. As such, the examination of the entire application would be a burden to the examiner. The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 rejected under 35 U.S.C. 103(a) as being unpatentable over Southarewsky (US 5,759,314) and further in view of "Science and Technology of Rubber" 2nd Edition. Southarewsky teaches the manufacture of a pneumatic tire having a radial carcass that extends between a pair of bead portions, each including two bead cores therein. Furthermore, the suggested carcass design includes multiple carcass plies having various configurations in the bead region of the tire. The reference, however, is silent with respect to the design of either of the two bead cores. In any event, the use of steel wires to construct the bead core of a tire is very well known and

exemplified in "Science and Technology of Rubber" (page 679). It would have been within the purview of one of ordinary skill in the art at the time of the invention to incorporate a bead core in accordance to that defined in the claimed invention in the manufacture of a pneumatic tire, as taught by Southarewsky.

The specific tire design outlined by Southarewsky is best illustrated in Figure 6. It should be initially noted that conventional bead cores are constructed from a bundle of one or more bead wires, which may comprise a single strand wire, twisted wires, or multi-filaments in the form of cables. As described in "Science and Technology of Rubber" (page 679), a bead is defined as comprising nonextensible steel wire loops which anchor the plies. Though not described in Southarewsky, it is the examiner's position that the bead cores are in fact constructed of steel wires that are arranged lengthwise and widthwise in radial and widthwise directions of the tire. Furthermore, it appears that all of the bead cores are depicted in Figure 6 as having dimensions in the radial and widthwise directions of the tire. As such, all four of the bead cores in the Southarewsky reference contain the claimed steel wire arrangement.

The figure contains the following key structural elements: a pair of bead cores (112A/112B and 114A/114B) that are adjacent to each other in a widthwise direction of the tire, a lower carcass (120), a first upper carcass (116), and a second upper carcass (118). As evident from Figure 6, all three of the carcass plies are continuous across the equatorial plane of the tire from one bead portion to the other. Though not suggested in Southarewsky, it is conventional in the tire industry to construct the radial carcass from rubberized plies of cords, as mentioned on page 1, lines 10-15 in the specification of the claimed invention.

With respect to claim 1, the lower carcass, first upper carcass, and second upper carcass all have roundtrip return portions located through a side face of a bead core with the steel wire arrangement and cover at least an innermost steel wire arrangement in the radial direction.

Regarding claims 2 and 3, it is clear from Figure 6 that the bead cores are adjacent one another in each bead region of the tire. In addition, the second upper carcass has a roundtrip return portion that is sandwiched between the bead cores and extends from an inside of the tire toward an outside thereof in the widthwise direction of the tire. Lastly, as noted above, the roundtrip return portion of the second upper carcass covers at least an innermost steel wire arrangement in the radial direction of the tire.

With respect to claim 4, the second upper carcass has a terminal part that extends along an outer side face of a bead core located outside in the widthwise direction of the tire. As such, the combination of references meets all the limitations described in the claimed invention.

3. Claims 1 and 4 rejected under 35 U.S.C. 103(a) as being unpatentable over Masclaux (US 4,700,765) and further in view of "Science and Technology of Rubber" 2nd Edition. Masclaux teaches the manufacture of a radial carcass pneumatic tire having two bead cores in each bead portion of the tire. The reference, however, is silent with respect to the design of either of the two bead cores. In any event, the use of steel wires to construct the bead core of a tire is very well known and exemplified in "Science and Technology of Rubber" (page 679). It would have been within the purview of one of ordinary skill in the art at the time of the invention to incorporate a bead core in

accordance to that defined in the claimed invention in the manufacture of a pneumatic tire, as taught by Masclaux.

As discussed in paragraph 2 above, the use of the claimed steel wire arrangement in both the radial and widthwise direction is conventional in the tire industry. In addition, the conventional use of rubberized cord plies was detailed by the applicant in page 1 of the specification, as noted above.

With respect to claims 1 and 4, the tire design described by Masclaux is best illustrated in Figure 1. Though the crown portion of the tire is not displayed, it is the examiner's belief that the carcass plies extend continuously across the equatorial plane from one bead portion to the other (as is conventional in most tires). In this instance, the tire is composed of a pair of bead rings (11 and 12), a first radial carcass ply (101), and a second radial carcass ply (102). The first radial carcass ply has a roundtrip return portion that is sandwiched between the bead rings and covers at least an innermost steel wire arrangement in the radial direction of the tire. Furthermore, the first radial carcass ply has a terminal part that extends along an outer side face of the bead core located outside in the widthwise direction of the tire. As such, the combination of the references meets all the limitations of the claimed invention.

4. Claim 9 rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Southarewsky or Masclaux and further in view of Ueyoko (US 5,885,387). As described in paragraphs 2 and 3 above, Southarewsky and Masclaux both teach the manufacture of pneumatic tires in which two bead rings are employed in each bead portion of the tire and the roundtrip return portion of a carcass ply is located through the side face of a given bead core, covering at least the innermost steel wire arrangement

in the radial direction of the tire. However, neither reference suggests that the roundtrip return portions of the carcass ply cords have multiple, overlapping terminal parts.

Ueyoko describes the manufacture of pneumatic tires in which a multiplicity of folding points is employed (analogous to "multiple, overlapping terminal parts"). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the design structure suggested by Ueyoko in the manufacture of a pneumatic tire, as taught by either one of Southarewsky or Masclaux, for the reasons set forth below.

Both the Southarewsky and Masclaux references are silent with respect to this design feature. Ueyoko, on the other hand, suggests that this design is advantageous to the performance of the tire. As described in Column 2, Lines 3-20, Ueyoko states that the employed turnup structure enhances bead durability, while promoting the weight reduction of the tire. The reference describes this turnup structure in Line 10, saying the carcass cord ply is provided with a multiplicity of folding points arranged in the tire's circumferential direction at both outer ends of the cord ply. The turnup structure is additionally depicted in Figure 3. As such, one of ordinary skill in the art at the time of the invention would have appreciated the use of such a turnup structure to enhance bead durability and promote weight reduction of the tire.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Travers (US 3,301,303) teaches the use of two bead rings in each bead portion of the tire, such that the roundtrip return portion of the carcass ply initially extends under both bead rings in the radial direction, then is turned over the

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axially outer bead ring and passes under the axially inner bead ring, and finally extends up along the sidewall of the tire. Pasco (FR 1,259,008) suggests the use of two bead rings in each bead portion of the tire, such that a first carcass ply (axially innermost) has a roundtrip return portion inside the axially innermost bead ring that envelops both bead cores and a second carcass that has a roundtrip return portion inside the axially innermost bead core and a terminal part that is sandwiched between the bead cores.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R Fischer** whose telephone number is **(703) 605-4397**. The examiner can normally be reached on M-F (7:30-4:00).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Justin Fischer

May 31, 2001


Michael W. Ball
Supervisory Patent Examiner
Technology Center 1700